

WHAT IS CLAIMED IS:

1. A method for transporting semiconductor wafers comprising:
5 providing a processing system including a transport module and a process chamber;
extending a semiconductor wafer transport device from said transport module into an adjacently positioned container, said container being a separate component from said processing system; and
10 removing at least one semiconductor wafer from said container using said wafer transport device.

2. The method of Claim 1, wherein said wafer transport device comprises a robot including an extendible robot arm and an end-effector.

15 3. The method of Claim 1, wherein said wafer transport device is in a fixed position.

4. The method of Claim 1, wherein said container comprises a Front Opening
20 Unified Pod (FOUP).

5. The method of Claim 1, wherein said removing further comprising placing said wafers into a storage location.

25 6. The method of Claim 1, wherein said process chamber comprises a chamber taken from the group consisting a mini batch furnace, annealing chamber, a chemical vapor deposition (CVD) chamber, and chambers used for physical vapor deposition, etching, impurity doping and ashing.

30 7. The method of Claim 1, further comprising transporting said wafers between a cooling module and said process chamber.

8. The method of Claim 1, wherein said process chamber comprises a single wafer rapid thermal processor.

9. The method of Claim 1, further comprising opening a gate valve to allow said wafer transport device to extend out from said transport module and into said container.

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10. A method for transporting a semiconductor wafer comprising:
providing a processing system including a transport module and a semiconductor wafer process chamber;
extending a robot including an extendible robotic arm from said transport module
10 into an adjacently positioned Front Opening Unified Pod (FOUP), said FOUP being a separate component from said processing system, said robot being at a fixed location;
removing at least one semiconductor wafer from said FOUP and placing said at least one semiconductor wafer in said semiconductor wafer process chamber using said extendible robotic arm.

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11. A system for transporting semiconductor wafers comprising:
a processing system including a transport module and a process chamber;
a semiconductor wafer transport device disposed in said transport module; and
a container configured to house a plurality of semiconductor wafers, said
20 container being a separate component from said processing system, said semiconductor wafer transport device being configured to extend into said container from said transport module and said semiconductor wafer transport device being configured to deliver said semiconductor wafer to said process chamber.

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12. The system of Claim 11, wherein said wafer transport device comprises a robot including an extendible robot arm and an end-effector.

13. The system of Claim 11, wherein said wafer transport device is in a fixed position within said transport module.

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14. The system of Claim 11, wherein said container comprises a Front Opening Unified Pod (FOUP).

15. The system of Claim 11, further comprising a storage location disposed within said processing system, wherein said wafer transport device is configured to deliver said wafers into said storage location.

5 16. The system of Claim 11, further comprising a cooling module disposed within said processing system, wherein said wafer transport device is configured to deliver said wafers into said cooling module.

10 17. The system of Claim 11, wherein said process chamber comprises a single wafer rapid thermal processor.

18. The system of Claim 11, a gate valve assembly disposed on said transport module to isolate said wafer processing system.

15 19. The system of Claim 11, wherein said container comprises a wafer cassette.

20 20. A system for transporting a semiconductor wafer comprising:
a processing system including a transport module and a single wafer process chamber; and
means for accessing an adjacently positioned Front Opening Unified Pod (FOUP), said FOUP being a separate component from said processing system, said means for accessing being at a fixed position within said transport module to remove at least one semiconductor wafer from said FOUP and to place said at least one semiconductor wafer in said single wafer process chamber.